baffles were not installed. The sampling at the entrance was started from the time when pumping into the stilling basin was started while at the other locations it was started only once the basin was filled and water started flowing over the spillway. Water from the spillway passed through a flume where it was sampled with an automatic sampler. The automatic sampler at the exit was equipped with a bubbler flow module (Teledyne ISCO 640) to confirm the flow rate in the outlet flume during the test. The stilling basin was lined to prevent erosion of the basin bottom.

The testing included physical and chemical treatments for controlling turbidity. The physical treatments tested were porous baffles made of 900 g m^2 coir material. Four 150 x 150 mm sections of the coir roll were sampled and thread diameter and opening size were measured at four random points each. From these measurements, we determined the coir material had an average thread diameter of 4.6 mm, 65 mm openings, and an overall 46% open space fraction. Three baffles in the basin were installed at 2.2, 3.6, and 4.9 m from the entrance. The first two baffle positions coincided with the location of sampler intakes in the basin, which were placed just downstream of each baffle. The baffles were 0.81 m tall (0.01 m above the outlet level) and were spread across the entire width of the basin. For tests without baffles, the sampler intakes remained in the same positions on the baffle supports. The chemical treatments included two methods of introducing PAM: a passive dosing system using a solid block (APS Floc Log 706b, Applied Polymer Systems Inc., Woodstock, GA, USA), which dissolved as the pumped water flowed over it, and an active dosing system in which a concentrated solution made from a powder form (APS Silt Stop 705, Applied Polymer Systems Inc., Woodstock, GA, USA) was injecting into the turbid water at the pump intake. The two polymer products are formulated from the same proprietary mixture of medium and high molecular weight anionic polyacrylamide and are certified by North Carolina Department of Environment and Natural Resources (NC DENR) for storm water treatment for turbidity. Both products were effective in flocculating this soil in laboratory screening tests (see below). The PAM solution was made by dissolving 705 powder in water (1.0 g L^{-1}) and injecting it directly into the intake hose of the turbid water pump using a variable speed, peristaltic pump. The peristaltic pump was calibrated to maintain 4 mg 705 L^{-1} at the pumping rate used in the tests. The floc log contained 3.4 kg PAM active ingredient and the dosage rate, as determined by the manufacturer, was < 2.0 mg L^{-1}. The PAM block was covered with metal hardware cloth with 100 mm^2 openings to keep the block from eroding excessively from the pump discharge water pressure. The treatments were initiated as soon as the water began to be pumped into the stilling basin. Water sampling occurred at 5 min intervals and with at least 8 samples at each sampling point in the basin for each test.

The laboratory screening test involved mixing 2 g of soil in 100 mL water, then dosing them with 0, 0.5, 1.0, 5.0, and 10.0 mg PAM L^{-1} using the APS 705 powder in solution. Additional tests were conducted on the fine fraction by mixing soil with 4 L of water until the turbidity after 5 min of settling was > 500 NTU. The supernatant, designated "high turbidity," was decanted and tested in the same manner as the 2 g soil tests. In addition, the decanted water was diluted to a lower turbidity ("low turbidity") and tested. When the tests showed the fine fraction maintained a much higher turbidity after PAM treatment than the whole soil, we added 2 g soil to the 1, 5, and 10 mg PAM L^{-1} high turbidity solutions to see if this addition would reduce turbidity.